



# A Reportcard on Rural and Urban Ohio

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Vinton County, Ohio

Source: <http://www.vintoncounty.com/vinton-county-villages.html>

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## Executive Summary

According to the U.S. Department of Agriculture (USDA), the total population in rural America has recently declined for the first time since U.S. county population estimates have been recorded (Cromartie 2013). Yet, this figure masks the tremendous heterogeneity across rural America. Population has been declining for decades in some rural counties, including those more dependent on agriculture and other natural resources. However, population has been increasing in rural communities with scenic and recreational amenities, as well as those near metropolitan areas.

The heterogeneity in population changes across rural communities reflects the variation among economic indicators as well. While some rural counties suffer from high poverty and unemployment rates, others have been performing better than most urban counties. This brief contains a general comparison of rural and urban communities across the U.S. and Ohio – examining changes over the last decade – and conducts a closer examination of Ohio to explore some of the variation across rural communities.

On average, rural communities have been performing worse than urban communities across the U.S. Comparing rural and urban areas, we find the following:

- From 2000 to 2013, the number of employed individuals in rural areas declined by almost 400,000; in urban areas, it grew by nearly 5 million.<sup>1</sup> However, because of contrasting changes in population, the unemployment rate was about the same for urban and rural counties.
- The percentage of individuals and children in poverty has been consistently higher in rural communities. Over the last three decades, most counties (85%) with a poverty rate of at least 20% have been located in rural areas, although just under two-thirds of all counties are rural. From 2000 to 2013, the poverty rate increased in both rural and urban areas, indicating that the Great Recession and its aftermath have been challenging for many American families. Moreover, it is concerning that the child poverty rate doubled over the last decade, increasing by a greater margin than the total poverty rate. Studies have shown that childhood poverty can have lifelong impacts on an individual's well-being, thereby impacting America's future workforce as well.
- Although the overall population is becoming more educated, the rural population continues to trail the urban population's educational attainment. In 2013, 31% of urban residents had at least a four-year college degree, compared to 18% in rural areas. Nevertheless, the percentage of individuals with at least a high school degree was nearly equivalent in urban and rural areas at 87% and 84%, respectively.
- According to the National Assessment of Education Progress, average reading and math proficiency scores for rural students were second only to suburban ones, whereas students in cities had the lowest score. However, a greater percentage of rural school districts had no students enrolled in AP courses because of limited access, particularly for remote rural schools districts with smaller populations; lack of interest may play a role as well (Gagnon and Mattingly 2015).
- Young adults are the most likely to migrate. Over the last decade, 71% of all counties lost individuals aged 15 to 24: 82% of rural counties had population loss, compared to only 52% of urban counties. Similarly, 89% of rural counties lost individuals aged 25 to 29, compared to 57% of urban counties. In contrast, 70% of all counties gained individuals aged 30 to 54, with a much smaller difference between urban and rural counties – 73% and 68%, respectively. The results suggest that, rather than focusing on deterring younger individuals from migrating, rural communities should focus on encouraging return migration of older families by making their communities more family friendly.

Similar to the U.S., urban Ohio has been performing better than rural Ohio in terms of economic indicators and overall educational attainment. Although educational attainment has been increasing across the state, rural communities continue to trail urban ones. Proficiency scores indicate that education among youth has improved as well, although county variation in scores illustrates the heterogeneity across rural

<sup>1</sup>This was calculated using wage and salary employment from the Bureau of Economic Analysis.

and urban communities in Ohio. The specifics concerning differences between rural and urban Ohio are as follows:

- Similar to the national rate, the unemployment rate has been the same for Ohio's urban and rural communities. However, the average respective employment-population rate fell from 62% and 60% in 2000 to 58% and 54% in 2013.<sup>2</sup>
- The average poverty rate has been slightly higher in Ohio's rural communities. In 2013, 15.7% and 16.2% of urban and rural residents, respectively, were in poverty. As a result, a higher proportion of nonmetro counties had a poverty rate of more than 15%. However, all of the metro counties containing major Ohio cities did as well, indicating that high poverty rates are an urban and rural phenomenon. The average child poverty rate was only slightly higher in rural areas, with 22% and 23% of urban and rural children living in poverty. Once again, although a higher proportion of nonmetropolitan areas had a child poverty rate of more than 25%, all but one of Ohio's major urban counties did as well.<sup>3</sup> However, all of the counties with a child poverty rate of over 30% were located in rural Appalachian Ohio. Conversely, the northwestern nonmetro counties in Ohio had some of the lowest poverty rates, many of which were lower than most of Ohio's metro counties.
- The percentage of Ohioans with at least some years of college grew from 2000 to 2013. However, rural residents continue to trail urban residents in higher educational attainment: the percentage with at least a Bachelor's degree continues to be higher in urban areas. Nevertheless, the proportion of residents with less than a high school degree is almost the same at 89% and 86% in urban and rural Ohio, both of which are higher than the national average (87% and 84%).
- The proportion of Ohio's fourth graders proficient in reading and math have increased substantially over the last decade. Although almost all Ohio counties had a reading proficiency rate of over 80%, there was significant variation across the state: the northeast had the highest percentages whereas the southeast had the lowest.

Although on average, urban Ohio has outperformed rural Ohio in economic indicators, comparing individual counties illustrates the significant heterogeneity across communities. In addition, rural communities face different challenges and advantages, depending on where it is located. There have been a number of efforts to revitalize rural Ohio and spur its economic growth, including reforming education, encouraging entrepreneurship and self-employment, and tax incentives. Although the other methods have had mixed effects, studies have shown that more educated locations outperform lower-educated communities in long-run economic outcomes. Thus, the key may be attracting out-migrants back into the community, rather than trying to deter high school and college graduates from leaving. Boosting educational attainment could ensure that America's future labor force has the necessary skills to become employed and facilitate economic growth in lagging rural communities, particularly during economic downturns.

<sup>2</sup>See the methodology box for an explanation of how the employment-population rate was calculated.

<sup>3</sup>The exception was Summit County (Akron).

## Introduction

For the first time since U.S. county population estimates have been recorded, the total population among nonmetro counties declined between 2010 and 2012 (Cromartie 2013). Agriculture Secretary Tom Vilsack stated that, “rural America with a shrinking population is becoming less and less relevant” and has made the revitalization of rural America a priority, particularly by attracting younger individuals (AP 2012). Although some rural counties have experienced population loss for decades, overall, total rural population had increased every year due to growth in high-amenity retirement/recreation locations and in nonmetro areas proximate to urban commuting centers. Figure 1 illustrates that, despite the overall decline in rural population, many nonmetro counties continued to have population growth from 2010 to 2013.

The economic difficulties brought about during the Great Recession have contributed to rural population loss in recent years. Historically, population declined in remote rural areas, while high amenity rural counties and those adjacent to urban communities continued to grow because of urban spillover effects (Johnson 2015). The Great Recession temporarily reversed this trend, raising a question of how rural communities have fared in recent years. In the following section, we conduct a general comparison of rural and urban communities across the U.S., examining differences in average socioeconomic characteristics and educational attainment, and how both have changed over the last decade. We conduct a similar analysis for Ohio in Section 3, followed by a closer examination of differences among Ohio’s rural communities in Section 4. Section 5 provides a discussion of efforts to strengthen Ohio’s rural communities, including reforming the education system, encouraging entrepreneurship and self-employment, and providing tax incentives.

## Methodology

Throughout this policy brief, urban and metro - and rural and nonmetro - are used interchangeably. Most of the estimates in this policy brief are calculated using data from the Census Bureau’s 2000 Decennial Census and the 2013 American Community Survey 5-year estimates, comparing metro and nonmetro areas. These geographic entities are identified by the Office of Management and Budget (OMB) according to population and worker commuting patterns.<sup>4</sup> Metro counties are functionally linked to a city of at least 50,000 people, while nonmetro counties do not have such urban linkages, or the links are much smaller. Although there are other classifications of urban and rural, this metro/nonmetro distinction is currently viewed as the most accurate among researchers when describing socioeconomic relationships.

For the employment-population rate, we collect county level data from the aforementioned Census Bureau datasets. First, we separate counties into metro and nonmetro using the 2013 Rural-Urban Continuum codes provided by the USDA Economic Research Service, which also uses OMB data to create its codes.<sup>5</sup> Then, we weight the proportion of employed workers in the civilian labor force by the population share in the county, with respect to the total population in the metro or nonmetro area.<sup>6</sup> Thus, the metro employment-population rate is the sum of these weighted proportions across metro counties.

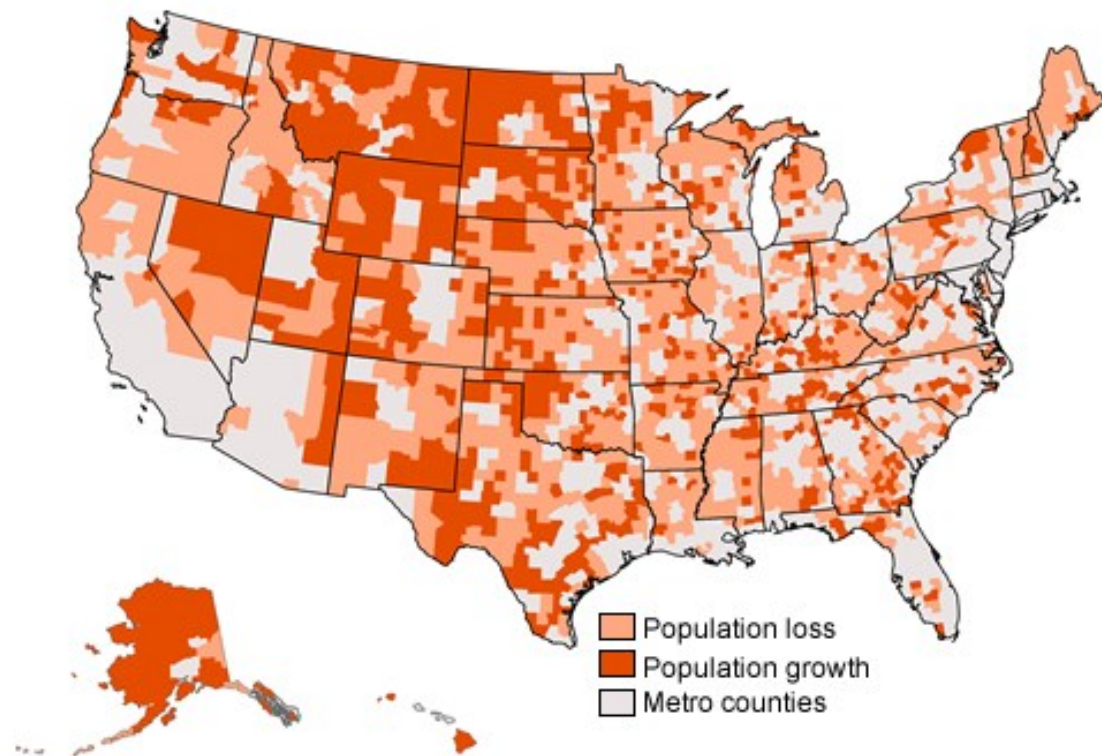
<sup>4</sup>The OMB uses Census data to identify metro areas, which contain a core urban area of at least 50,000 individuals, and micro areas, which contains an urban area of at least 10,000 but less than 50,000. Each metro and micro area includes all counties containing the urban core and adjacent counties with high commuting rates into the urban core. See <http://www.census.gov/population/metro/> for more details.

<sup>5</sup>Metro counties are separated into three categories according to population size: more than 1 million, 250,000 to 1 million, and fewer than 250,000 (1-3). Nonmetro counties are also separated by population size (20,000 or more, 2,500 to 19,999, and fewer than 2,500), but are also separated according to whether it is adjacent (4, 6, 8) or not adjacent (5, 7, 9) to a metro area. See <http://www.ers.usda.gov/data-products/rural-urban-continuum-codes/documentation.aspx> for more details.

<sup>6</sup>The population is for individuals aged 16 and over.



**Figure 1: Nonmetro County Population Change  
(2000 - 2013)**



Source: USDA, Economic Research Service using data from U.S. Census Bureau.

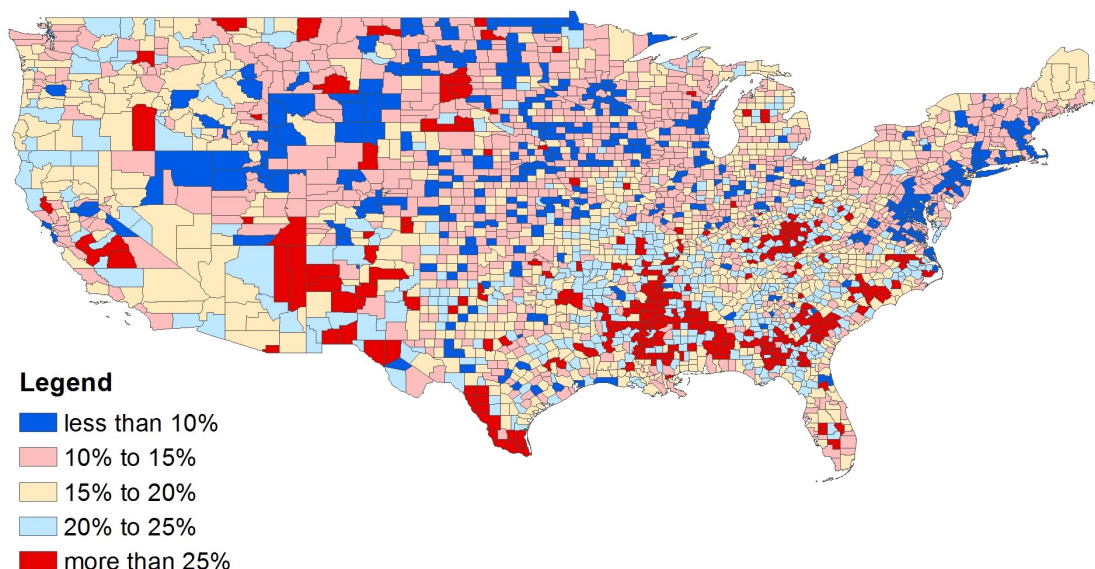
## Comparison of Rural and Urban Communities

The population has been shrinking in some rural communities for decades. Rural out-migrants outnumber in-migrants when the local economy is weak (Cromartie 2013). However, the number of newborn children has always offset this rural migration loss and deaths in the county. As a result, total population across rural communities had been growing until recently.

Although rural communities had a declining population for the first time, the total U.S. population has continued to steadily increase. Since 2000, the U.S. population increased by 14%, resulting in over 320 million individuals by June 2015. During this period, the number of employed individuals in rural areas declined by almost 400,000; in urban areas, it grew by nearly 5 million.<sup>7</sup> Thus, the average employment-population rates for urban and rural communities were 60% and 56% in 2000; by 2013, the rates had dropped to 59% and 53%, respectively. Nevertheless, because of contrasting population changes and declines in labor-force participation rates, the unemployment rate has remained relatively similar for urban and rural communities.

The lower employment-population rate in 2013 indicates that the economy is still recovering from the Great Recession, which is also evident in higher poverty rates. In 2013, over a quarter of U.S. counties had a poverty rate of over 20%. Figure 2 shows that there is regional variation in poverty across the U.S.: the south has the highest poverty rates, whereas the northeast and Midwest have the lowest, regardless of whether the county is urban or rural. Some of these areas have had persistently high poverty rates, or a poverty rate of at least 20% over the past 30 years. These areas include the Mississippi Delta and the Appalachian mountains, as illustrated in Figure 3. Over 85% of the counties with persistently high poverty rates are rural, contributing to the higher average percentage of low-income individuals in rural counties.

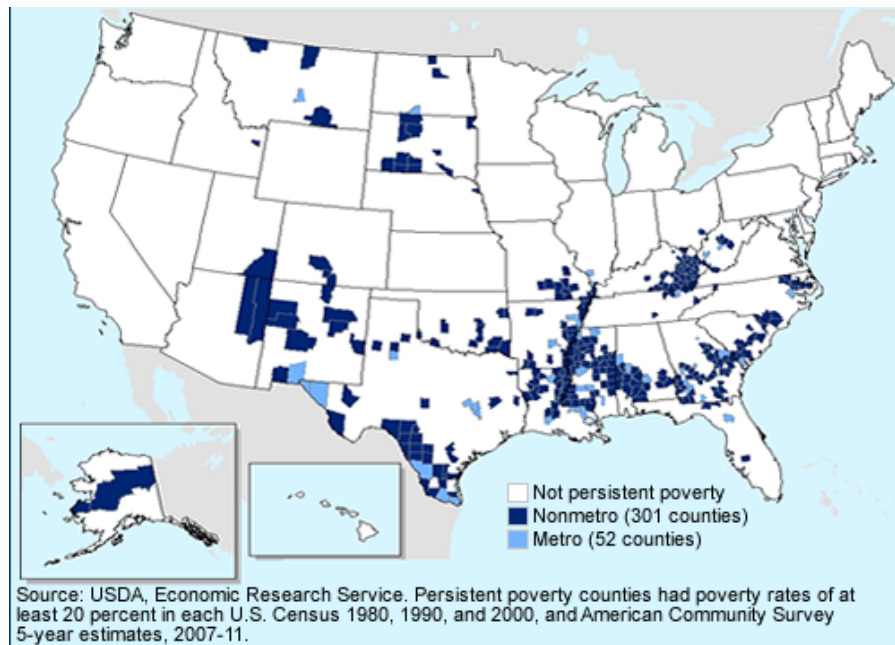
**Figure 2: Percentage of Individuals in Poverty by County (2013)**



Source: 2013 American Community Survey 5-year estimations.

<sup>7</sup>The calculation was conducted for wage and salary employment using data from the Bureau of Economic Analysis.

**Figure 3: Counties with Persistently High Poverty Rates  
(1980 - 2011)**

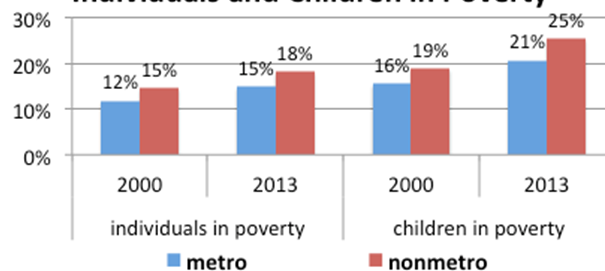


Obtained from: <http://www.ers.usda.gov/topics/rural-economy-population/rural-poverty-well-being/geography-of-poverty.aspx>

Despite the regional variation in poverty across the U.S., the average poverty rate has been consistently higher in rural communities. Figure 4 illustrates that poverty has worsened for both rural and urban communities. The child poverty rate has been consistently higher and growing at a faster rate than the overall poverty rate for both rural and urban areas. Numerous studies have found that child poverty has lasting harmful effects - particularly for those in poverty for an extended period of time - including their future income, health, and educational achievement (e.g. Duncan et al. 1998; Korenman 1995; Sherman 1994).

Education is a means by which individuals can escape poverty and increase their lifetime earnings. Numerous studies have shown that more schooling is positively associated with higher lifetime earnings. Yet researchers struggle to untangle the effects of schooling from other factors that would affect income, such as the individual's inherent abilities (e.g. Card 1995; Mincer 1974; Belzil and Hansen 2002). Nevertheless, studies have found that average educational attainment is linked to faster local economic growth (Simon, 1998; Simon and Nardinelli, 2002). Thus, improving educational attainment could have implications for future economic growth, as well as reducing poverty in rural communities.

**Figure 4: U.S. Percentage of  
Individuals and Children in Poverty**



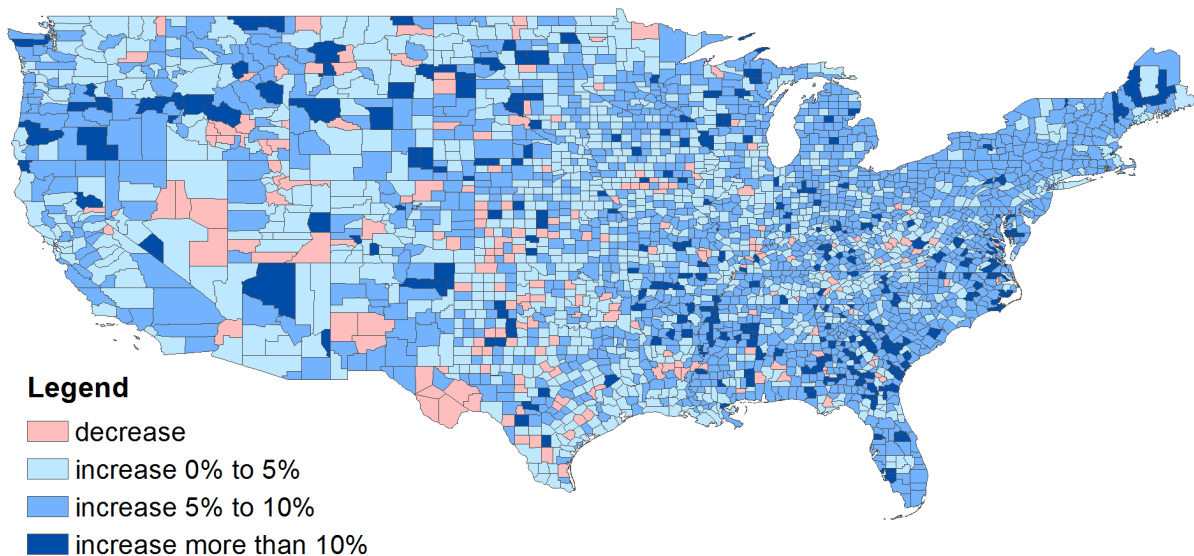
Source: 2000 Decennial Census, 2013 American Community Survey 5-year Estimates by Metropolitan Statistical Area (MSA)



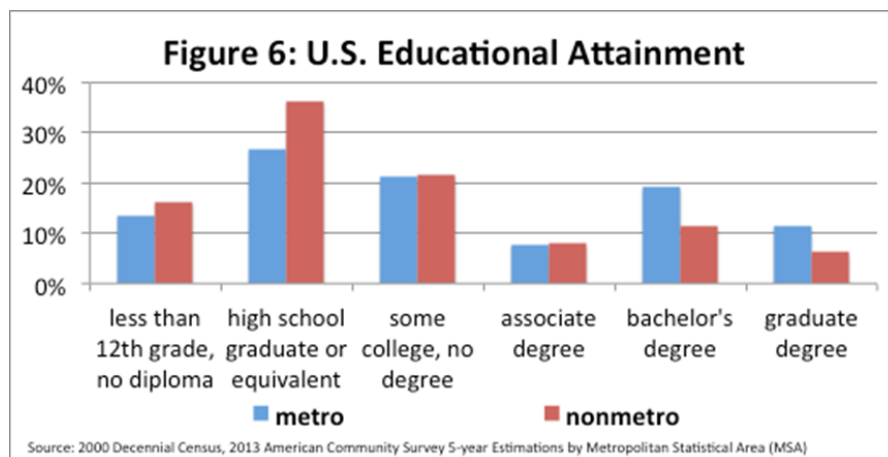
The number of individuals with a Bachelor's or graduate degree has grown by 34% since 2000. As shown in Figure 5, nearly all counties had an increase in the percentage of individuals with at least a college degree. However, only 18% of the rural population had at least a college degree in 2013, compared to 31% of the urban population. Figure 6 illustrates that this difference is mostly offset by the percentage of individuals with a high school degree in rural communities. As a result, 87% and 84% of urban and rural residents, respectively, had at least a high school degree. The educational data suggests that lower educational attainment is a key reason rural areas continue to lag.

Although a higher proportion of individuals in urban areas obtain higher education, this does not necessarily indicate that rural communities have lower quality schools. According to the National Assessment of Education Progress, the average reading and math proficiency scores for rural students in 2013 were second only to students attending suburban schools. As shown in Figure 7 and 8, students in Grade 4, 8, and 12 had the same ordering in average proficiency scores, although the differences across these regions were relatively small: suburban, rural, town, and cities - from highest to lowest.

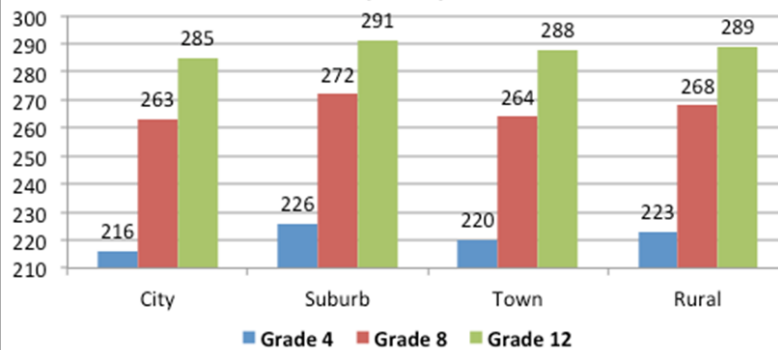
**Figure 5: Change in Percentage of Individuals with at least a Bachelor's Degree (2000 - 2013)**



Source: 2000 Decennial Census and 2013 American Community Survey 5-year estimations.

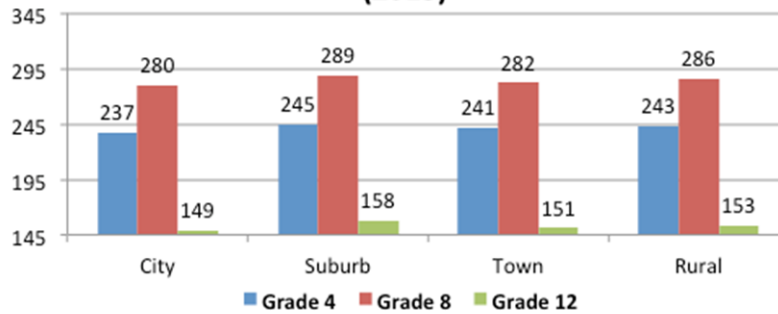


**Figure 7: Reading Proficiency Scores (2013)**



Source: U.S. Department of Education, National Assessment of Education Progress. Obtained from Child Trends DataBank. The areas are separated as follows: urban - central city of a CMSA or MSA; suburb - any territory outside of the central city and within CMSA or MSA; town - population greater than or equal to 2,500 outside a CMSA or MSA; rural - territory designated as rural by Census Bureau (classifications can be found at: [http://nces.ed.gov/ipeds/data/rural\\_locales.asp](http://nces.ed.gov/ipeds/data/rural_locales.asp))

**Figure 8: Math Proficiency Scores (2013)**



Source: U.S. Department of Education, National Assessment of Education Progress. Obtained from Child Trends DataBank.

Despite the relatively high proficiency scores in rural areas, Gagnon and Mattingly (2015) found that 47% of rural school districts had no students enrolled in AP courses, compared to only 20%, 5%, and 2% of town, suburban, and urban districts, respectively.<sup>8</sup> They found that this disparity was partially due to lack of access, particularly for districts located in more remote rural areas and those with a smaller population. Similar to greater employment opportunities from urban spillover effects, students in rural districts can benefit from living close to schools in suburban or urban districts. These students may be able to enroll in courses not offered in their own district, whereas students in remote rural areas would have more difficulty doing so. Yet, Gagnon and Mattingly (2015) also found that some rural students were less likely to enroll in AP courses, even when they had sufficient access. Thus, while some rural students may face difficulties furthering their education because of limited access, a lack of interest may also play a role.

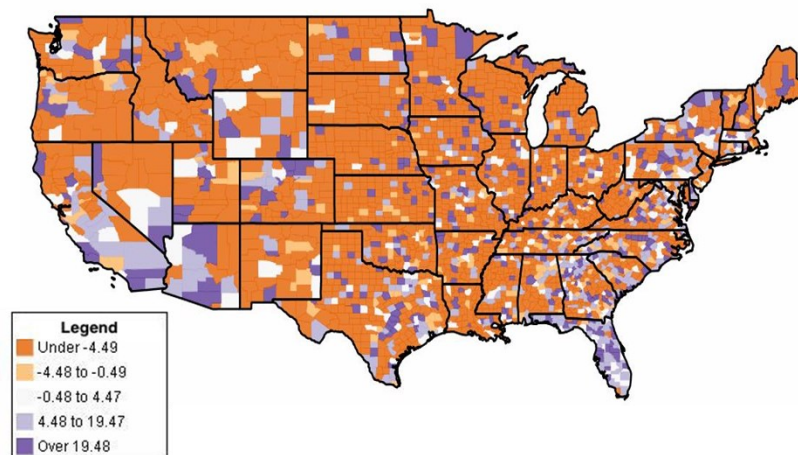
Members of rural communities are divided in their perception of education. Schools are valued for their ability to strengthen community identity by bringing residents together through school-sponsored events, such as dances and sports (Sherman and Sage 2011). However, one of the main reasons younger individuals leave their community is to pursue higher education, which sometimes creates animosity towards education. Although some view the “rural brain drain” as a necessity - with the hope that these individuals will return after furthering their education and revitalize the economy - others don’t see the role of education in their children’s future, although it’s in the individuals’ best interest to further their ed-

<sup>8</sup>According to the study, these areas are organized as follows: city – territory inside an urbanized area and inside a principal city; suburb – territory outside a principal city and inside an urbanized area; town – territory inside an urban cluster but outside an urbanized area; rural – territory outside an urban cluster or urbanized area.

ucation (Sherman and Sage 2011).<sup>9</sup> These younger individuals play a large role in the future of their communities with their initial decision to stay or leave, and for those who choose the latter, their subsequent decision to return (Carr and Kefalas 2009).

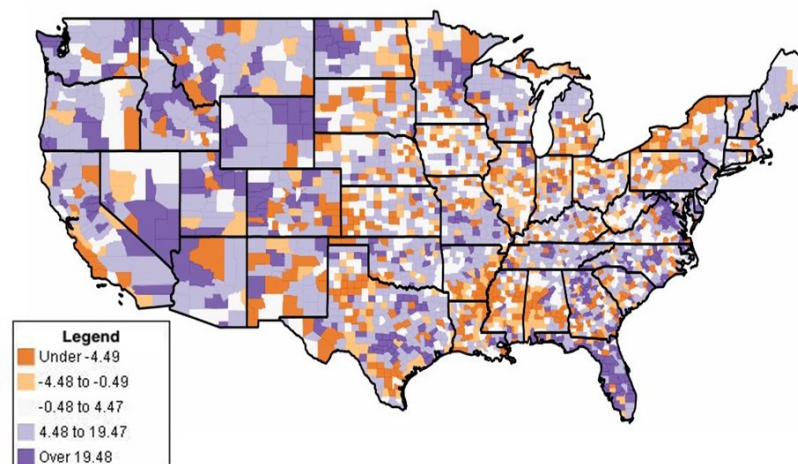
Young adults are the most likely to migrate from both urban and rural communities. Figure 9 illustrates that, among younger individuals, the total number of out-migrants outnumbered in-migrants from 2000 to 2010. In fact, 71% of all counties lost individuals aged 15 to 24 by 2010 and 77% of the individuals aged 25 to 29.<sup>10</sup> However, the out-migration rates are much higher in rural counties than in urban ones. Among individuals aged 15 to 24, 82% and 52% of rural and urban counties had population loss, while 89% and 57% of the respective counties lost individuals aged 25 to 29. In contrast, 70% of the counties *gained* individuals aged 30 to 54, as shown in Figure 10. The difference between urban and rural communities for this age group was much smaller: 68% and 73% of the respective counties had an increase of individuals aged 30 to 54.

**Figure 9: Net Migration Rate - Age 15 to 24  
(2000 - 2010)**



Source: Winkler, R., K. Johnson, C.Cheng, J. Beaudoin, P. Voss, and K. Curtis. Age-Specific Net Migration Estimates for US Counties, 1950-2010. Applied Population Laboratory, University of Wisconsin-Madison, 2013.

**Figure 10: Net Migration Rate - Age 30 to 54  
(2000 - 2010)**



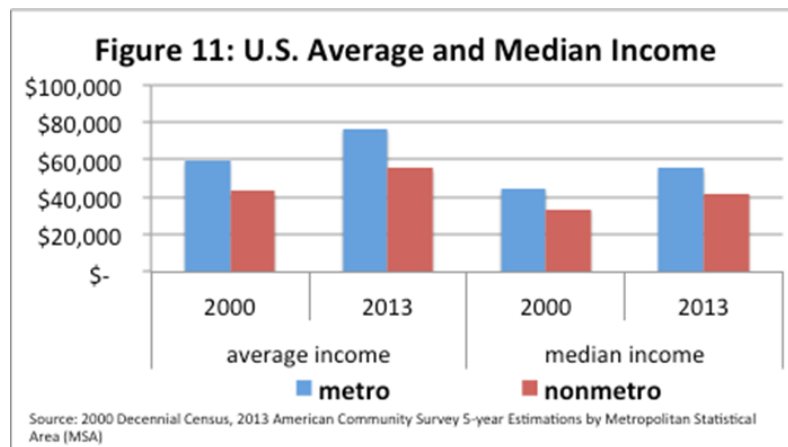
Source: Winkler, R., K. Johnson, C.Cheng, J. Beaudoin, P. Voss, and K. Curtis. Age-Specific Net Migration Estimates for US Counties, 1950-2010. Applied Population Laboratory, University of Wisconsin-Madison, 2013.

<sup>9</sup>The study was conducted by interviewing Golden Valley, California residents on their perception of education.

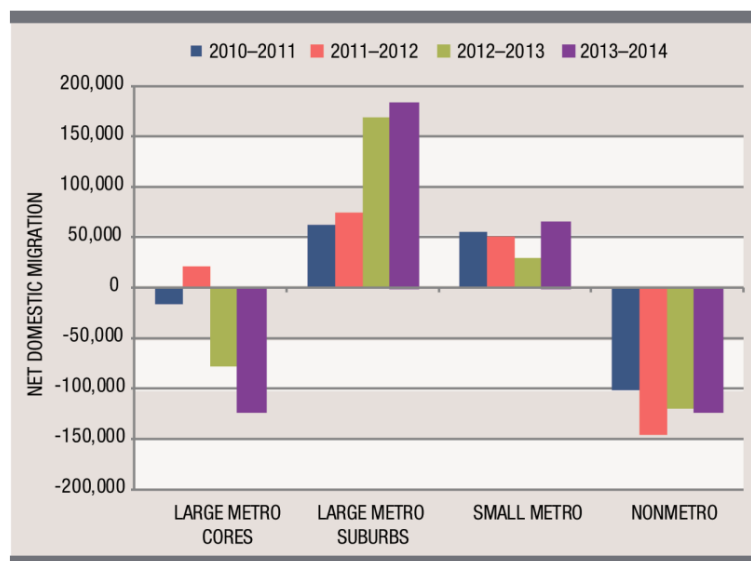
<sup>10</sup>For a map of the net migration trend for individuals ages 25 to 29, see Figure 21 in the Appendix.

Thus, it appears that incentivizing middle-aged individuals to return may be a better tactic to improve economic growth, rather than trying to prevent out-migration of younger individuals. Younger individuals tend to leave rural communities to pursue higher education or a stronger labor market that has higher wages (e.g. Carr and Kefalas 2009). These higher wages are reflected in the household median and average income, which have been consistently higher in urban communities than in rural ones, as shown in Figure 11.

Most of the population growth in recent decades has occurred in the suburbs. Despite media reports of a population resurgence in downtown cores, Figure 12 shows that the large metro cores have mostly experienced a *decline* in population, and that the substantial increase occurred in the suburbs. Nevertheless, nonmetro areas have had the greatest decline, although there is variation across rural communities. Johnson, Winkler, and Rogers (2013) found that rural counties dependent on agriculture have experienced a long history of out-migration, whereas those with scenic and recreational amenities have had substantial gains. Older individuals, particularly families, are attracted to these amenities and other benefits offered in nonmetro areas, such as larger homes and more open space. Thus, it is important to recognize the differences within urban and rural communities across the U.S. and in each state.



**Figure 12: Domestic Migration by Metropolitan Status (2000 - 2014)**



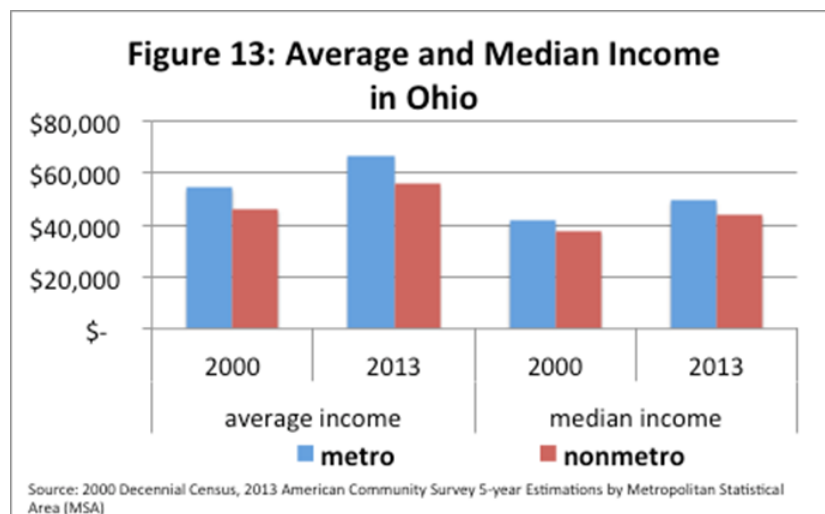
Source: Census Bureau. Obtained from Johnson (2015): <http://scholars.unh.edu/carsey/237/>.

## Comparison of Rural and Urban Communities

As in the overall nation, on average, Ohio's urban communities have been performing relatively better than its rural ones. The employment-population rate has been consistently higher in urban areas, although both continue to recover from the Great Recession. In 2013, the average employment-population rate was 58% and 54% in urban and rural communities. However, these percentages are lower than their respective 2000 rates (62% and 60%) because labor-force participation declined and the unemployment rate increased. As a result, the unemployment rate in Ohio was equivalent to the national rate in 2013. Figure 13 shows that average and median income have also been consistently higher in urban communities; the gap between rural and urban communities has remained proportional over the years.

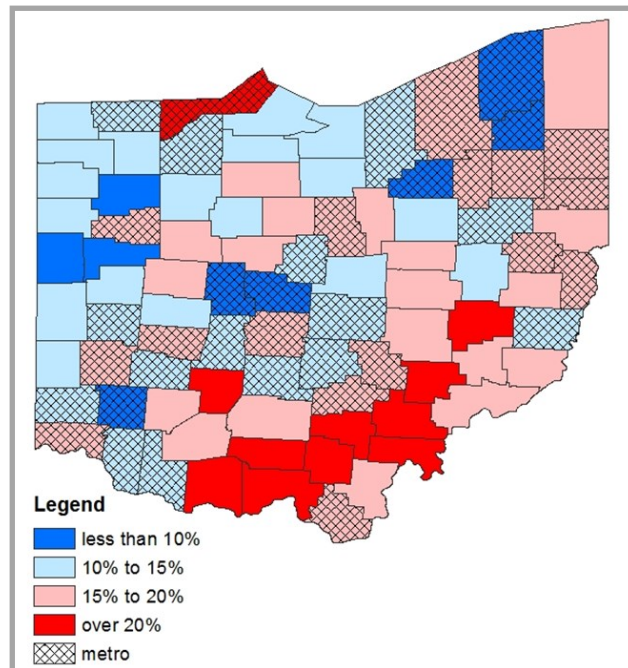
Unlike the U.S., Ohio's poverty rate has been relatively similar in rural and urban communities. In 2000, 10.6% of Ohioans were in poverty in urban and rural counties, which were both below the national averages. The respective 2013 poverty rates in Ohio increased to 15.7% and 16.2%. Although a greater proportion of nonmetro counties had poverty rates greater than 15%, all of Ohio's major urban counties did as well: Summit County (Akron), Cuyahoga County (Cleveland), Franklin County (Columbus), Montgomery County (Dayton), Hamilton County (Cincinnati), and Lucas County (Toledo). In all but two of these counties, 18% of the residents were below the federal poverty line. Lucas County had the highest percentage at 21%, while 15% of Summit county residents were in poverty. In addition, poverty rates varied across metro and nonmetro counties. Figure 14 shows that, among nonmetro counties, the southeastern region had the highest percentage of individuals in poverty, while the northwestern region had the lowest. In fact, most of the northwestern nonmetro counties had a poverty rate lower than most of Ohio's metro counties.

Figure 15 illustrates that the regional differences in child poverty mirrors the distribution of overall poverty, with the highest rate in southeastern Ohio and the lowest in the northwestern region. However, the child poverty rate has been consistently higher than the overall poverty rate, which is concerning. As mentioned in the previous section, studies have shown that child poverty has lasting effects on the child in terms of health, education, and income, thereby impacting our future workforce. If a significant portion of the future workforce has debilitating health problems or did not acquire the necessary skills to be a productive member of the community, the effects can be detrimental for America's economic future.



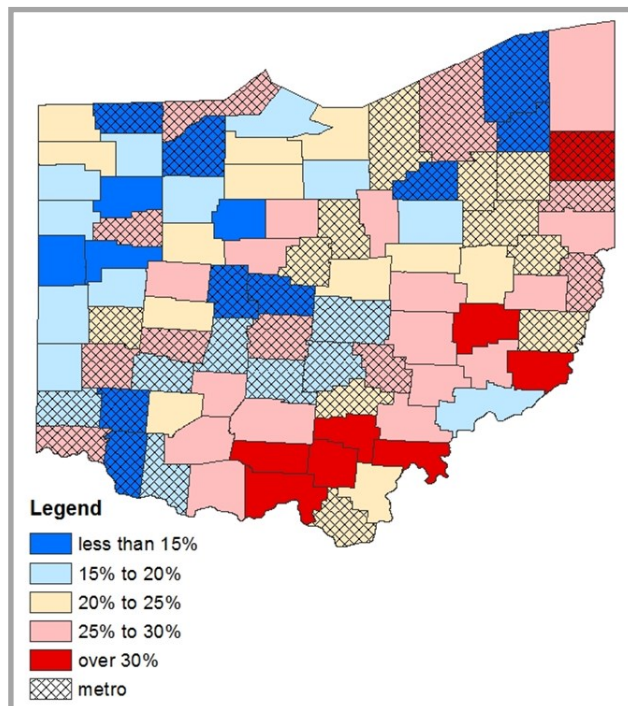


**Figure 14: Percentage of Individuals in Ohio in Poverty (2013)**



Source: 2013 American Community Survey. Metropolitan counties identified using 2013 ERS Rural-Urban Continuum (1-3).

**Figure 15: Percentage of Ohio Children in Poverty (2013)**



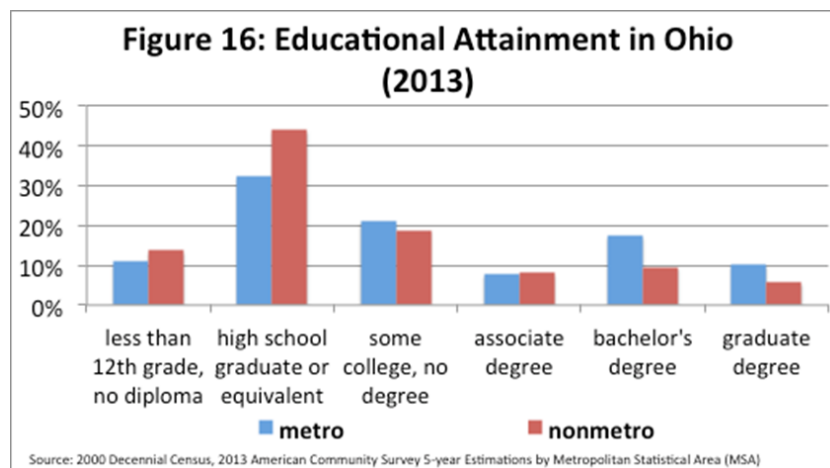
Source: 2013 American Community Survey. Metropolitan counties identified using 2013 ERS Rural-Urban Continuum (1-3).

In 2000, 9% and 10% of Ohio's urban and rural children were in poverty; this more than doubled to be 22% and 23% by 2013. All of the counties with a child poverty rate greater than 30% are located in Appalachian Ohio, along with most of the counties with a child poverty rate of 25% to 30%. A report by the Annie E. Casey Foundation (2015) found that without social programs, more children would have been in poverty over the last decade. Using the Census Bureau's Supplemental Poverty Measure (SPM), which accounts for rising costs and differences in cost of living, they found that almost half a million Ohio children, or more than double, would have been in poverty without social programs such as Supplemental Nutrition Assistance Program (SNAP), Women's, Infants, and Children (WIC), and school lunches.<sup>11</sup>

In almost all of the counties with major cities, over 25% of the children were in poverty. Summit County (Akron) was the only exception: its child poverty rate was 22%. Despite this concentration of high child poverty rates in major Ohio cities, nearly half of the nonmetro counties had a child poverty rate of over 25%, compared to only a quarter of the metro counties. According to a study by the Children's Defense Fund, policymakers tend to target urban areas to impact the largest number of families in need (Kostman 2014). The study shows that, although urban children in need are more concentrated, the percentage of rural children in poverty are growing at a faster rate and are more likely to suffer from food insecurity due to lack of accessibility to grocery stores.

Low-income individuals in rural areas face different challenges than those in urban areas. Safety tends to be less of an issue, although most rural communities face additional constraints such as limited public transportation and clinics; many families are forced to survive without running water or other utilities in their house (Messina 2012). In addition, there is concern that these challenges make it difficult to recruit high quality teachers, raising concern regarding the quality of rural Ohio schools.

Educational attainment has been growing across Ohio, resembling the national growth discussed in the previous section. The percentage of individuals who have at least some college education has grown by 7% in urban and rural areas, although both remained slightly lower than the national averages.<sup>12</sup> Despite this upward trend since 2000, Figure 16 illustrates that urban areas continue to have a higher percentage of individuals with at least a Bachelor's degree. However, similar to the national educational attainment trend, the difference is somewhat offset by the percentage of high school graduates in rural areas. In fact, the percentage of individuals with at least a high school degree is greater in Ohio than the nation for both urban and rural communities.<sup>13</sup>



<sup>11</sup>The report includes the following social programs: Supplemental Nutrition Assistance Program (SNAP); Women, Infants, and Children (WIC); School Lunch; Cash Welfare (TANF / AFDC); Housing Subsidies; Low-Income Home Energy Assistance Program (LIHEAP); Social Security; Unemployment Insurance; Workers' Compensation; Supplemental Security Income (SSI); Child Support; Earned Income Tax Credit (EITC); and Child Tax Credit.

<sup>12</sup>The percentages are 57% and 42% in urban and rural Ohio, and 60% and 47% for the U.S.

<sup>13</sup>The percentages are 89.2% and 86.3% in urban and rural Ohio, and 86.5% and 83.7% for the U.S.

The lower levels of educational attainment in rural Ohio do not imply that urban students are performing better in school. In compliance with the No Child Left Behind Act of 2001, students in public schools take the Ohio Achievement Assessments (OAA): every year from grade 3 to 8 for math and reading, in grades 5 and 8 for science and social studies, and in grade 4 and 7 in writing.<sup>14</sup> Although Ohio was granted a waiver that no longer requires all schools reach 100% proficiency, there has been a significant improvement in proficiency scores since 2000.<sup>15</sup>

According to data collected by the Ohio Department of Education, the proportion of fourth-grade students proficient at reading and math has improved dramatically since 2000.<sup>16</sup> In the 2000-01 school year, an average of 54% of students were found to be proficient at reading, with the **highest** score being 76% at Geauga County. By the 2013-14, the average rose to 88%, with the **lowest** proficiency score being 75% for Monroe County. Proficiency in mathematics also increased substantially, but by a lower margin: the percentage of proficient students rose by 24%, from an average of 58% in 2000-01 to 82% in 2013-14. The county with the lowest level of proficiency nearly doubled from 32% (Vincent) to 60% (Monroe); the highest proficiency was Mercer County for both years, increasing from 81% to 93%.

Almost all Ohio counties had a reading proficiency rate over 80%, but the average score varied across the state.<sup>17</sup> Figure 17 shows that the percentage of fourth-grade students proficient at reading closely resembles the distribution of poverty. Most of the counties in northwest Ohio had the highest percentage of children proficient at reading, whereas most of the counties in the southeast had the lowest, illustrating that the variation within rural areas can be greater than the variation between rural and urban areas. The county variation of proficiency in mathematics mirrored reading proficiency, as shown in Figure 22 in the Appendix.

Although this dramatic increase in proficiency could be an indication that school quality has improved, there is concern that these standardized exams do not accurately measure student ability. Some have argued that the OAA “presents an inaccurate picture of student performance and encourages schools to focus on teaching students to perform well on tests rather than the skills to perform well in life” (NPR 2015b). They raise concern that some students may know the subject material but perform poorly on test day because they’re anxious, distracted, don’t try, or some other unrelated reason. In addition, they worry that teachers are incentivized to only teach the materials expected to be on the exam.

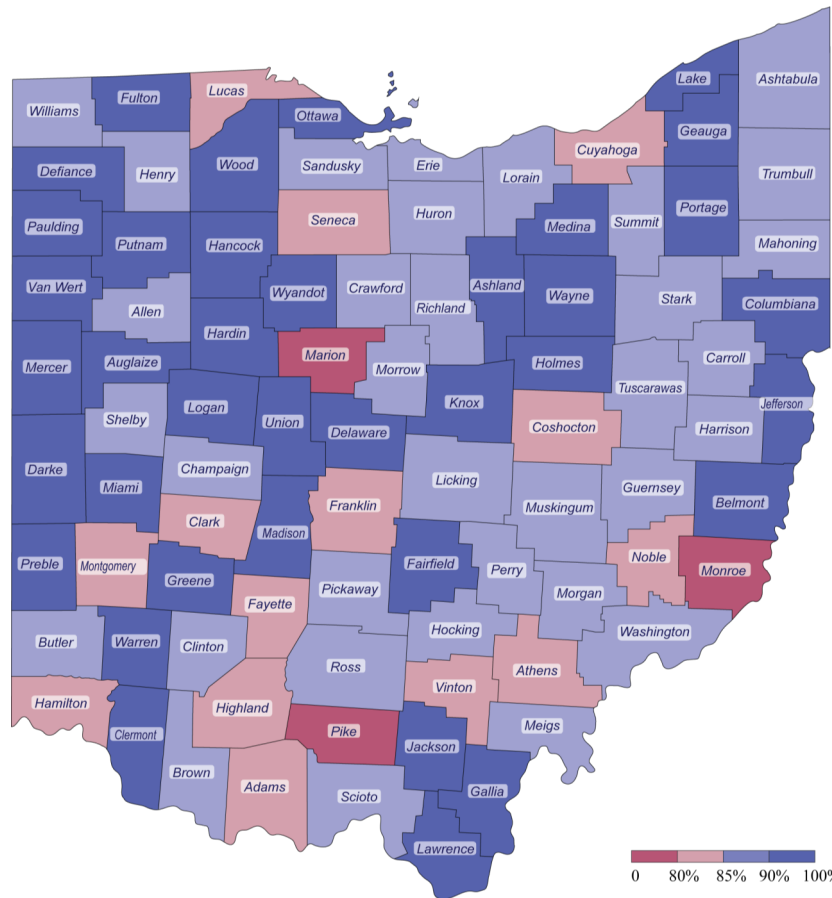
<sup>14</sup>Charter non-public schools may, but are not required to offer the exam. See <http://portal.success-ode-state-oh-us.info> for additional details.

<sup>15</sup>See <http://education.ohio.gov/getattachment/Topics/School-Improvement/No-Child-Left-Behind/ESEA-Flexibility-Waiver/Ohio-ESEA-Waiver-Amendment-07-10-13-3.pdf.aspx> for details.

<sup>16</sup>Although data is obtained by the Ohio Department of Education, it was retrieved from Annie E. Casey Foundation Kids Count Data Center.

<sup>17</sup>There were three counties that had a proficiency rate lower than 80%: Marion (77.7%), Pike (77.3%), and Monroe (75.1%).

**Figure 17: Percentage of Fourth Graders Proficient at Reading  
(2013 - 2014)**



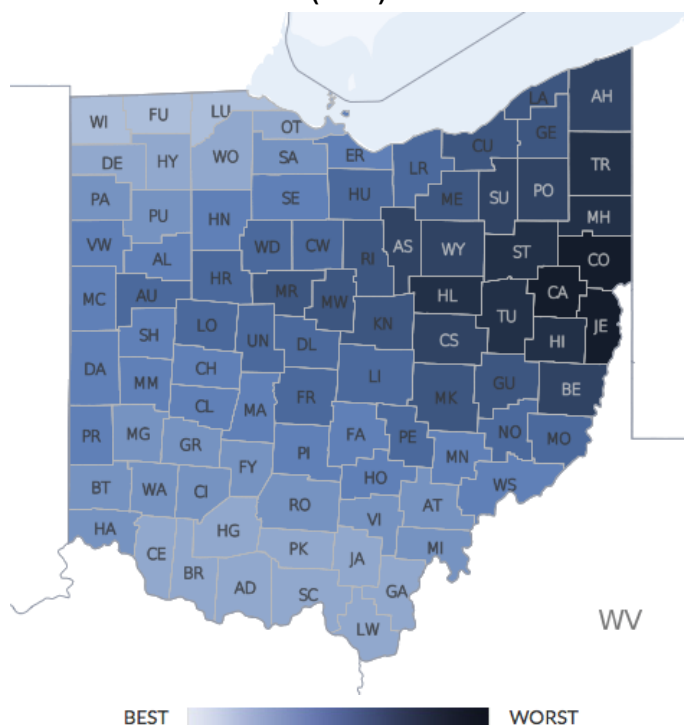
Source: Ohio Department of Education, Interactive Local Report Card Power User Reports. Obtained from the Annie E. Casey Foundation Kids Count Datacenter.

## Rural Ohio

Although on average, Ohio's urban communities are doing relatively better in economic indicators of well-being, there is significant variation across rural Ohio. As illustrated above in Figure 14 and 15, most of the nonmetro counties with high percentages of individuals and children in poverty are along the southeastern border of Ohio, or in Appalachian Ohio. In contrast, rural counties in the northwest have relatively low poverty rates, often lower than most urban counties.

Appalachian Ohio is known for having persistently high poverty rates.<sup>18</sup> In the 1960s, rampant poverty across Appalachia led the federal government to establish the Appalachian Regional Commission to promote economic development.<sup>19</sup> Chronic poverty contributes to low health outcomes in Appalachian Ohio, particularly in the southern portion.<sup>20</sup> According to County Health Rankings, the six counties with the lowest health outcomes are all located in Appalachian Ohio.<sup>21</sup> In fact, over half of the counties (59%) in the lower half of health outcomes are in this region. Thus, Southern Appalachia had the highest poverty rate and the lowest health outcomes in Ohio. However, Figure 18 shows that Ohio's worst air pollution originates in Appalachian counties further north, with the highest density of particulate matter in Columbiana (CO), Carroll (CA), and Jefferson County (JE). The particulate pollution may be partially attributable to the recent oil and gas drilling boom impacting these counties – especially in Carroll County.

**Figure 18: Air Pollution - Particulate Matter (2014)**



Source: County Health Rankings and Roadmaps, A Robert Wood Johnson Foundation program <http://www.countyhealthrankings.org/app/ohio/2014/measure/factors/125/map>

<sup>18</sup>See <http://www.oache.org/about/appohio.php> or <http://www.arc.gov/counties> for a list of Appalachian counties.

<sup>19</sup>See <http://www.arc.gov/about/ARCHistory.asp> for details.

<sup>20</sup>See Figure 23 in the Appendix.

<sup>21</sup>Starting with the worst health outcomes: Scioto, Lawrence, Adams, Jackson, Meigs, and Pike County. Health outcomes were measured using lowest average age of death and surveyed responses of healthiness.

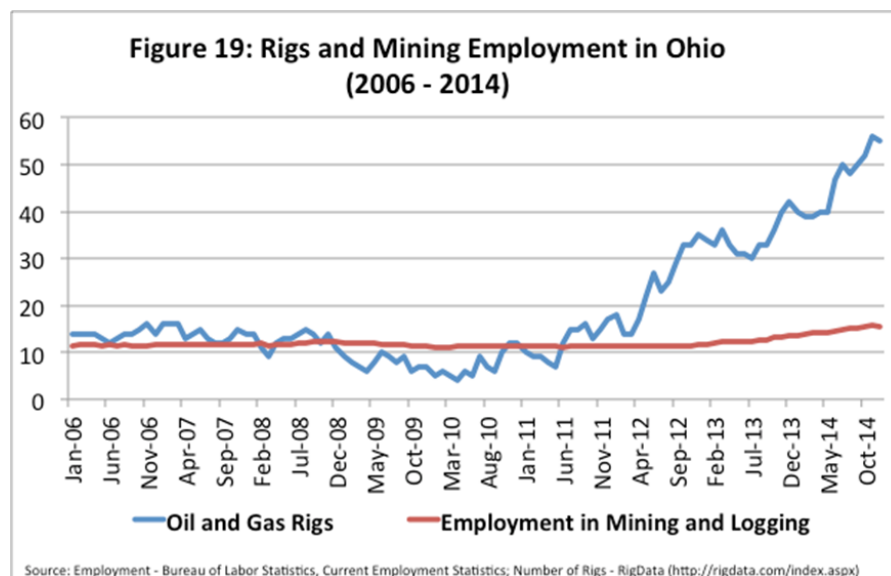


A number of counties in the upper Ohio River Valley in Appalachia have been attracting investors in the recent oil and gas drilling boom. Centered in Carroll County and across eastern Ohio, landowners with generous lease and royalty payments have been able to pay off their debts, purchase newer equipment for their farms, travel, move, and/or retire by leasing their land to drilling companies (Downing 2014; Funk 2011). It was reported that in Noble County, Eclipse Resources mailed \$16 million in oil and gas leasing checks to 70 households over the period of a month (Schneider 2012). While these changes have benefited many community members, housing advocates raise concern that the rising cost of rent may drive low-income individuals out of the county (Downing 2014). Although Farren et al. (2013) find that the cost of rent has not been greatly affected by shale development, the aforementioned news articles claimed that rent had doubled or tripled after drilling began.

School districts are also hoping to reap benefits from the recent oil and gas boom. Carrollton Schools signed a lease with Chesapeake Energy to drill six to eight wells on school property (Lieszkowszky 2013). In exchange, the district received about \$400,000 in signing bonuses and will receive an additional 18% of royalties when production begins. Although these districts hope to benefit from these leases, some have signed deals that could leave the school district worse off. According to the president of Worthington Energy Consultants, a district that agrees to allow drilling is also giving the energy company authority to use school property to dump dirty, contaminated fracking water in the wells if they choose not to produce (Lieszkowszky 2013).

Although anecdotal stories covered by the media suggest that landowners are benefiting greatly from the shale and gas boom, it remains unclear if there will be any lasting benefits. Figure 19 shows that, despite the rapid increase in the number of rigs beginning in 2011, direct energy employment in Ohio - including energy support employment - has been more modestly affected. From January 2006 to March 2013, employment in Ohio's mining and logging sector fluctuated mostly between 11,000 and 12,000 employees.<sup>22</sup> Since then, direct employment increased by about 4,000. Thus, it will be important to see whether these communities continue to have employment growth in the coming years, and whether there are any lasting positive benefits from the recent boom, especially after drilling slowed beginning in late 2014.

The challenges facing rural northwest Ohio are much different. These communities have been attempting to revitalize their manufacturing industry and attract business to the area; such local efforts are known as the Heart of the New Manufacturing Economy.<sup>23</sup> These efforts continue to be challenged by

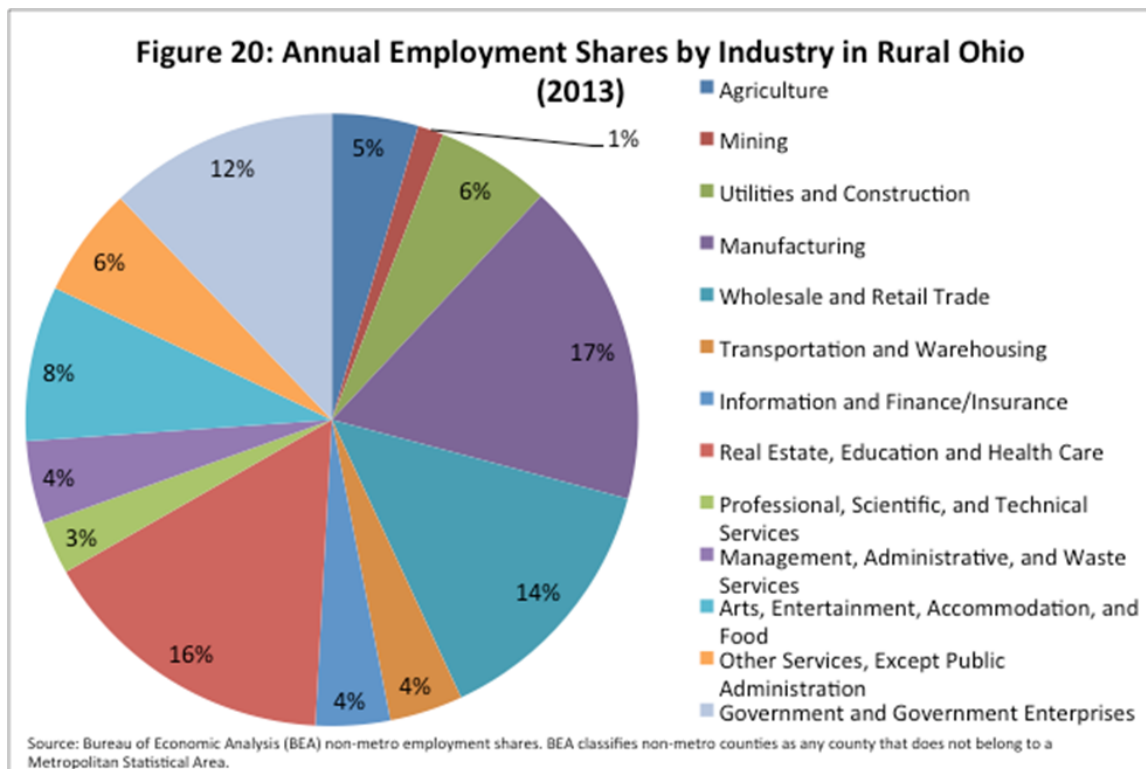


<sup>22</sup>From July 2008 to February 2009, direct mining and logging employment was slightly above 12,000. In January and March 2010, employment fell to 10,000.

<sup>23</sup>See <http://rgp.org/living-and-working-here/> and [http://www.toledochamber.com/region/Toledo\\_Region\\_Story.aspx](http://www.toledochamber.com/region/Toledo_Region_Story.aspx).

fierce international competition and rapid productivity growth that limit employment opportunities, which have led to large employment declines in recent decades (Egger and Kreickemeier 2009). In addition, this area has had the highest level of agricultural production. According to the Census of Agriculture, four of the five Ohio counties with the highest agricultural sales in 2012 were in northwest Ohio (ERS 2015).<sup>24</sup> These four counties contributed 17% of Ohio's total agricultural sales for a total of over \$1.6 billion. Although changes in technology and outmigration have led to more intensive capital use in farming, some communities – such as Mercer County – are working to preserve its farm economy while embracing a growing recreation and tourism industry through the expansion of resorts (Center for Urban and Public Affairs 2013).

Although agriculture may play a key role in northwestern Ohio, it comprises a small portion of total employment in rural communities. Figure 20 shows that in 2013, agriculture only made up 5% of total rural employment in Ohio. Rural Ohio's highest employment shares are from manufacturing, with large shares also in service sectors and wholesale and retail trade.



<sup>24</sup>From highest to lowest, the counties are Mercer, Drake, Wayne, Hardin, and Putnam County.

## Efforts to Strengthen Rural Ohio

There have been a number of proposals to revitalize rural communities. Although the principles for economic growth are similar for urban and rural areas, the latter faces additional constraints because of their limited resources and smaller markets. Oftentimes, policymakers focus on urban communities because a policy can affect a greater number of people (Kostman 2014). Nevertheless, there have been numerous proposals targeting Ohio's rural communities, a few of which are covered in this policy brief: promoting entrepreneurship and self-employment, reforming the education system, and providing grants and tax incentives.

Entrepreneurship is often regarded as an effective way to generate economic growth. Jolley (2015) estimated that in Athens County, 140 jobs and \$6.1 million had been generated by businesses incubated by the Innovation Center at Ohio University, resulting in an estimated \$656,113 in state and local tax revenues. Stephens and Partridge (2011) found that self-employment in the Appalachian Region is positively correlated with future economic growth. As a result, policymakers are interested in promoting entrepreneurship through investment in infrastructure and providing grants or tax incentives for investors (Acs et al. 2008).

Despite the potential economic growth generated through entrepreneurship, it is important to distinguish between "necessary" self-employment, driven by an inability to find other employment (perhaps from being laid off), and those who have the potential to employ other individuals in the community by contributing new ideas or a better process - or "opportunity" entrepreneurs. Although the latter could stimulate the local economy, if self-employment reflects an inability to find other employment, it may not be sustainable for the economy or the individual. Partridge, Enver, and Clark (2008) found that in 2005, the typical self-employed worker earned about half as much as the typical wage-and-salary worker, whereas in 1969, self-employed workers earned about 4% more than wage-and-salary workers. In addition, studies have found that the percentage of adults with a college degree is negatively associated with growth in self-employment (e.g. Goetz and Rupasingha 2009), but positively associated with the creation of businesses that employ others (e.g. Figueroa-Armijos, Dabson, and Johnson 2012). These studies highlight the importance of having a skilled local labor force in rural communities.

One of the problems rural communities face is maintaining a labor force with the necessary skills to attract other business establishments. Oftentimes, improving school quality is considered to be an effective way to address this issue. Faggian and McCann (2006) found that universities act as a conduit to attract high quality students into the area, thus generating a skilled local labor force. As a result, improving the education system could have a dual effect of incentivizing residents to stay in the community and attracting new business establishments.

Governor Kasich hopes to make education more affordable and accessible, thereby creating a more skilled labor force. There has been concern for several years that rural Ohio school districts do not have the financial abilities to provide the same level of education as urban districts, which may violate the state constitution (NPR 2015a). Even so, the state has been slow to fill in the gap and rural funding continues to lag.

As noted above, improving secondary education could help encourage younger individuals to remain in their communities and enhance their potential skills and talents. Moreover, tailoring academic programs and research agendas to meet firms' needs could help retain jobs and deter younger individuals from leaving, or reduce the "rural brain drain". Conversations about the "rural brain drain" tend to focus on the out-migration of younger individuals, specifically after high school or college (e.g. Sherman and Sage 2011). However, some rural communities attract older adults who have established their careers. Artz (2003) found that these rural areas tend to have amenities that improve these individuals' quality of life, different from the high-paying jobs that might initially attract these individuals out of the community, such as more open space and lower housing costs. She also highlights the importance of conducting further

research to determine which amenities attract previous out-migrants to return. Gibbs (2005) also stresses that, although the “rural brain drain” may dissuade communities from improving the quality of their schools, doing so would help facilitate higher returns after individuals have furthered their education elsewhere.

Policymakers have attempted to generate economic growth in lagging communities through grants and tax incentives, hoping to attract businesses into these communities; these regions are commonly referred to as empowerment zones. Scioto County was designated the Greater Portsmouth Enterprise Community (EC) in the Federal Empowerment Zone/Enterprise Community Program, created in the 1993 Omnibus Budget Reconciliation Act. One program goal was to reclaim brownfields in the community by cleaning up and reinvesting in properties that had been contaminated (HUD 2001).<sup>25</sup> In addition, using funds from being designated as an EC, a revolving micro-loan program for minorities and small businesses was created to encourage entrepreneurship.

As of May 2003, in addition to the nearly \$3 million provided through the EC grant, the Greater Portsmouth EC had obtained about \$76 million from a variety of sources, including other federal agencies, state and local government, private sector, and non-profit organizations.<sup>26</sup> For instance, the CAO health and dental clinics were expanded to offer more services, including a teen-pregnancy program funded by the local Department of Jobs and Family Services (HUD 2001). Despite these efforts, as of 2013, the percentage of Scioto county residents in poverty remained the fourth highest in Ohio at 23.3%, leaving doubt about the program’s efficacy.

<sup>25</sup>See <http://www.epa.gov/brownfields/> for a definition of brownfields.

<sup>26</sup>See <http://www.hud.gov/offices/cpd/economicdevelopment/programs/rc/tour/oh/greaterportsmouth/fundingreport.pdf> for details.

## Conclusion

There have been numerous efforts to revitalize rural communities in Ohio and across the U.S., such as encouraging self-employment and entrepreneurship, reforming the education system, and providing grants and tax incentives. Although there has been some evidence that these efforts generate economic growth, it remains unclear which strategy has been the most effective. Nevertheless, it is imperative to continue examining the effects of these efforts to address the challenges faced by rural communities.

There is significant variation among the challenges faced by rural communities based on their resources. While some residents of Appalachian Ohio have recently benefited from the oil and gas boom, the area continues to suffer from persistently high poverty rates. Despite the Appalachian Regional Commission's efforts to spur economic growth in the region, the counties in this area continue to have the highest poverty rates in Ohio. In comparison, rural communities in northwest Ohio have experienced relatively low poverty rates, often lower than most urban communities.

Because every rural community has its own unique challenges and advantages, it is unlikely that one policy could effectively revitalize all stagnating rural communities. Past efforts to spur economic growth also show that a multifaceted approach is necessary. Rural communities need to develop and protect amenities that would incentivize individuals to return, including middle-aged adults. The key may be attracting out-migrants back into the community, rather than trying to deter high school and college graduates from leaving. Studies have shown that more educated locations outperform lower-educated communities in long-run economic outcomes, playing a crucial role of creating their own employment opportunities and attracting businesses into the area. Considering the vital role of rural communities, researchers and policymakers must continue to work together to develop strategies to revitalize languishing rural communities.



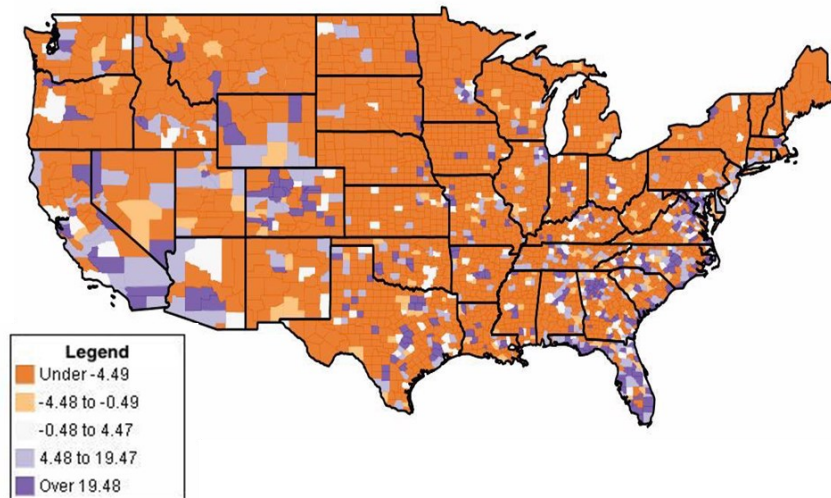
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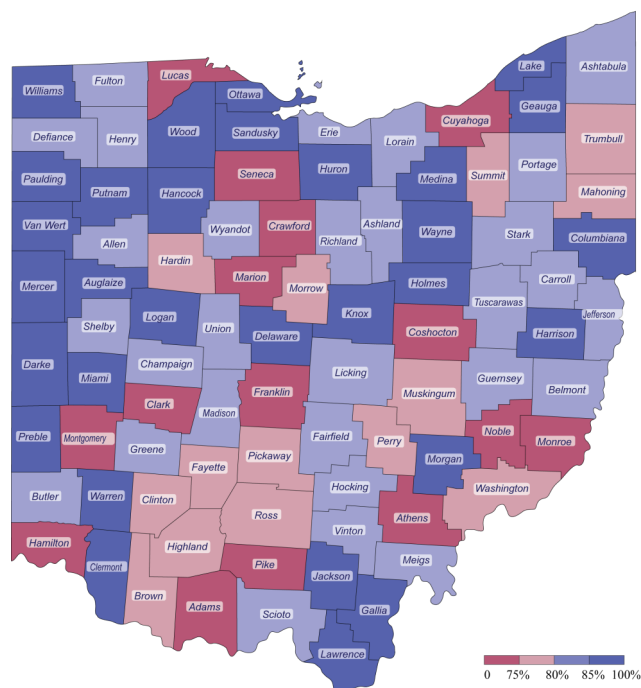
## Appendix

**Figure 21: Net Migration - Age 25 to 29  
(2000 - 2010)**



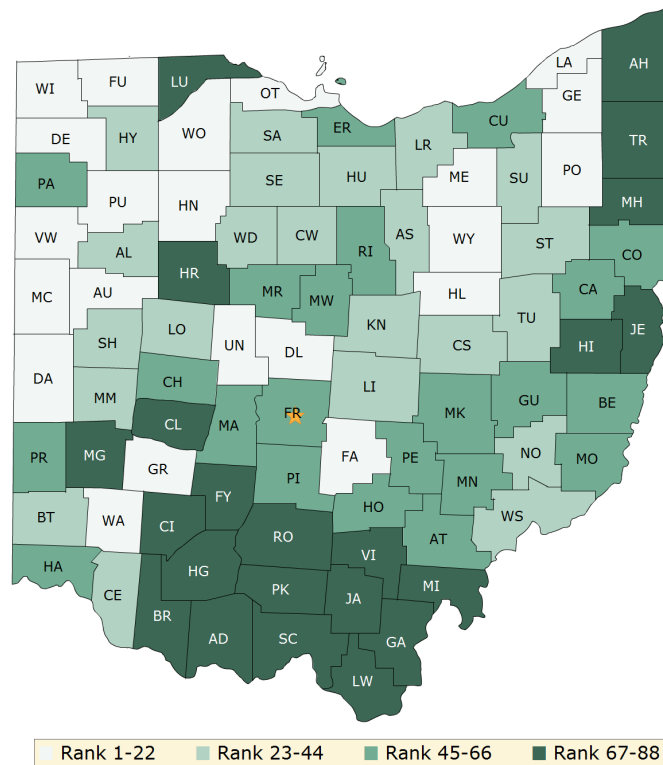
Source: Winkler, R., K. Johnson, C. Cheng, J. Beaudoin, P. Voss, and K. Curtis. Age-Specific Net Migration Estimates for US Counties, 1950-2010. Applied Population Laboratory, University of Wisconsin-Madison, 2013.

**Figure 22: Percentage of Fourth Graders Proficient at Mathematics  
(2013 - 2014)**



Source: Ohio Department of Education, Interactive Local Report Card Power User Reports. Obtained from the Annie E. Casey Foundation Kids Count Datacenter.

**Figure 23: Health Outcomes  
(2014)**



Source: County Health Rankings and Roadmaps, A Robert Wood Johnson Foundation program [http://www.countyhealthrankings.org/sites/default/files/state/downloads/2014%20Health%20Outcomes%20-%20Ohio\\_0.png](http://www.countyhealthrankings.org/sites/default/files/state/downloads/2014%20Health%20Outcomes%20-%20Ohio_0.png)